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PATENT

Serial No. 10/C20,019

Amendment in Reply to Office Action of December 19, 2005  
And Notice of Abandonment of September 14, 2006IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A digital signal processing apparatus for executing a plurality of operations, comprising a plurality of functional units wherein each functional unit is adapted to execute operations, and control means for controlling said functional units, characterized in that said control means comprises a fetch unit, a decode unit, and a plurality of control units responsive to said decode unit, wherein at least one control unit is operatively associated with a respective functional unit for controlling its function, including controlling a number of repetitions of execution of its function, and each functional unit is adapted to execute operations in an autonomous manner under control of the control unit associated therewith.

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2. (Currently Amended) An apparatus according to claim 1, characterized by FIFO (~~first-in/fist-out~~ first-in/first-out) register means adapted for supporting data-flow communication among said functional units.

3. (Currently Amended) A digital signal processing apparatus for executing a plurality of operations, comprising a plurality of functional units wherein each functional unit is adapted to execute operations, and respective control means for said each functional unit for controlling said functional units in coordination with one another in response to a single fetch unit and a single decode unit, characterized by FIFO (~~first-in/fist-out~~ first-in/first-out) register means adapted for supporting data-flow communication among said functional units.

Claim 4 (Canceled)

5. (Currently Amended) ~~Apparatus~~ An apparatus according to ~~any one of claims~~ claim 2, characterized in that said FIFO register

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(14) means comprises a plurality of FIFO registers.

6. (Previously Presented) An apparatus according to claim 1, characterized in that each of said functional units are provided with at least one control unit.

7. (Previously Presented) An apparatus according to claim 1, which apparatus is adapted to execute a pipeline consisting of a plurality of stages, wherein each stage comprises a functional unit.

8. (Currently Amended) An apparatus according to claim 1, characterized in that for each control unit an instruction register and a counter are provided, ~~where-in~~ wherein said counter indicates the number of times an instruction stored in said instruction register has to be executed by the corresponding functional unit.

9. (Previously Presented) An apparatus according to claim 1, further comprising a program memory means storing a main program, characterized in that said main program contains directives for

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instructing said control units.

10. (Currently Amended) A method for processing digital signals in a digital signal processing apparatus, comprising a plurality of functional units wherein each functional unit is adapted to execute operations, characterized in that said functional units are controlled by control means including a single fetch unit, a single decode unit and a plurality of control units wherein at least one control unit is operatively associated with a respective functional unit so that each functional unit is able to execute operations in an autonomous manner under control of the control unit associated therewith, the control unit controlling a number or repetitions of execution of its associated functional unit.

11. (Previously Presented) An apparatus according to claim 9, characterized in that data-flow communication among said functional units is supported by FIFO (first-in/first-out) register means.

Claim 12 (Canceled)

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13. (Currently Amended) An apparatus according to claim 11,  
wherein a pipeline consisting of a plurality of stages is provided,  
and each stage is executed by a at least one of said functional  
units.

14. (Currently Amended) An apparatus according to ~~claim 10~~  
claim 1, characterized in that the number of times an instruction  
stored has to be executed by a at least one of said functional  
units is counted by the corresponding control unit.

Claim 15 (Canceled)